

1 *Sub A* 1. An oral device comprising:  
2 a handle; <sup>12</sup>  
3 a head, <sup>14</sup> extending from said handle, having a pair of  
4 elongated arms that include <sup>30, 32</sup> opposed surfaces; and  
5 a pair of opposed <sup>34</sup> cleaning elements, mounted on said  
6 opposed surfaces, the cleaning elements being constructed  
7 and positioned to be inserted into the user's interproximal  
8 regions when the oral device is moved back and forth over  
9 the user's teeth, each of the cleaning elements being  
10 positioned at an acute angle relative to an interproximal  
11 line.

1 2. The oral device of claim 1 wherein at least some  
2 of said cleaning elements are positioned to be flexed  
3 towards said opposed arms during movement in a first  
4 direction, and then straighten out until they are  
5 substantially perpendicular to said opposed surfaces during  
6 movement in a second, opposite direction.

1 3. The oral device of claim 1 wherein the device  
2 includes a plurality of pairs of cleaning elements. <sup>(34)</sup>

1 4. The oral device of claim 3 wherein each of the  
2 cleaning elements extends at substantially the same angle as  
3 the other cleaning elements on the same surface.

1 5. The oral device of claim 3 wherein said pairs of  
2 cleaning elements and said opposed surfaces define a pair of  
3 opposed brush heads.

1           6. The oral device of claim 5 wherein said handle  
2 comprises an elongated member.

1           7. The oral device of claim 5 wherein the opposed  
2 cleaning elements of each pair of cleaning elements define a  
3 V-shape.

1           8. The oral device of claim 1 wherein said angle is  
2 greater than 10 degrees.

1           9. The oral device of claim 8 wherein said angle is  
2 greater than 15 degrees.

1           10. The oral device of claim 9 wherein said angle  
2 is from about 15 to 40 degrees.

1           11. The oral device of claim 3 wherein the opposed  
2 cleaning elements of each pair define a V shape.

1           12. The oral device of claim 1 comprising at least two  
2 pairs of cleaning elements, said pairs of cleaning  
3 elements being positioned along said opposed surfaces at  
4 predetermined intervals.

1           13. The oral device of claim 12 wherein said pairs  
2 of cleaning elements extend from the handle towards the  
3 opposite end of the head in a row.

1           14. The oral device of claim 13 wherein the  
2 cleaning elements are progressively shorter as the pairs are  
3 spaced further from the handle.

1           15. The oral device of claim 14 wherein the  
2 cleaning elements of each pair are from 2 to 20% shorter  
3 than the cleaning elements of an adjacent pair that is  
4 closer to the handle.

1           16. The oral device of claim 1 wherein said opposed  
2 surfaces have a predetermined depth selected to accommodate  
3 [the front and back teeth] of a user.

1           17. The oral device of claim 16 wherein said depth  
2 is from about 5 to 15 mm.

1           18. The oral device of claim 1 wherein said handle  
2 includes a gripping portion that is constructed to be  
3 grasped between [the thumb] and first two fingers of a user's  
4 hand.

1           19. The oral device of claim 1 wherein said handle  
2 includes a substantially disc-shaped gripping portion.

1           20. The oral device of claim 18 wherein said handle  
2 includes an elongated shaft, said head is mounted at a first  
3 end of said elongated shaft, and said gripping portion is  
4 mounted at a second end of said elongated shaft.

1           21. The oral device of claim 1 wherein said head  
2 further comprises a web extending from said handle, and said  
3 opposed arms extend outwardly from opposite sides of said  
4 web.

1           22. The oral device of claim 21 wherein said web  
2 defines a substantially U-shaped opening that faces away  
3 from said handle.

1           23. The oral device of claim 21 further comprising  
2 a plurality of pairs of centering elements<sup>40, 41</sup>, positioned on  
3 said opposed surfaces between said cleaning elements and  
4 said web, for guiding the oral device.

1           24. The oral device of claim 23 wherein the  
2 centering elements are positioned so that, in use, at least  
3 two centering elements on each side are touching the teeth  
4 simultaneously.

1           25. The oral device of claim 23 wherein said  
2 centering elements comprise elastomeric elements.

1           26. The oral device of claim 23 wherein said  
2 centering elements comprise bristle tufts.

1           27. The oral device of claim 23 wherein said  
2 centering elements are mounted substantially perpendicular  
3 to front and back surfaces of the user's teeth.

1           28. The oral device of claim 12 wherein adjacent  
2 pairs of cleaning elements are spaced from 0.5 to 6.0 mm  
3 apart along the length of said arms.

1           29. The oral device of claim 1 wherein said  
2 cleaning elements comprise bristle tufts.

1        30. The oral device of claim 1 wherein said  
2 cleaning elements comprise elastomeric fins.

1        31. The oral device of claim 29 wherein at least  
2 some of the cleaning elements comprise inner, relatively  
3 longer thin bristles and outer, relatively shorter and  
4 thicker supporting bristles.

1        32. The oral device of claim 29 wherein said  
2 bristles have a diameter of from about 0.003 inch to 0.009  
3 inch.

1  
1        33. The oral device of claim 21 wherein said  
2 cleaning elements are angled away from said web.

1  
1        34. The oral device of claim 33 wherein said  
2 cleaning elements are positioned at an angle of about 10 to  
3 20 degrees with respect to said web.

1  
1        35. An oral device, constructed to be moved  
2 horizontally over [the teeth] with a ratcheting motion,  
3 comprising:

4        a handle;

5        a head, extending from said handle, having a pair of  
6 elongated arms that include opposed surfaces; and

7        a pair of opposed cleaning elements, mounted on said  
8 opposed surfaces, each of the cleaning elements being

9 positioned at an angle of greater than 15 degrees. w/R/T what?

1           36. The oral device of claim 35 wherein at least  
2 some of said cleaning elements are positioned to be flexed  
3 towards said opposed arms during movement in a first  
4 direction, and then straighten out until they are  
5 substantially perpendicular to said opposed surfaces during  
6 movement in a second, opposite direction.

1           37. The oral device of claim 35 wherein the device  
2 includes a plurality of pairs of cleaning elements.

1           38. The oral device of claim 35 wherein said angle  
2 is from about 15 to 25 degrees.

1           39. The oral device of claim 37 wherein the opposed  
2 cleaning elements of each pair define a V shape.

1           40. The oral device of claim 37 wherein said pairs  
2 of cleaning elements and said opposed surfaces define a pair  
3 of opposed brush heads.

1           41. The oral device of claim 40 wherein said handle  
2 comprises an elongated member.

1           42. The oral device of claim 40 wherein the opposed  
2 elements of each of said pairs of cleaning elements defines  
3 a V-shape.

1           43. The oral device of claim 35 wherein said  
2 opposed surfaces have a predetermined depth selected to  
3 accommodate the front and back teeth of a user.

1 44. The oral device of claim 43 wherein said depth  
2 is from about 5 to 15 mm.

1 45. An oral device comprising:  
2 a handle that includes a gripping portion (1<sup>a</sup>)  
3 constructed to be grasped between the thumb and first two  
4 fingers of a user's hand;  
5 a head, extending from said handle, having a pair of  
6 elongated arms that include opposed surfaces; and  
7 pairs of opposed cleaning elements, mounted on said  
8 opposed surfaces, said pairs of cleaning elements being  
9 positioned along said opposed surfaces at predetermined  
10 intervals for insertion into the user's interproximal  
11 regions.

1 46. The oral device of claim 45 wherein the  
2 gripping portion is substantially disc-shaped.

1 47. The oral device of claim 46 wherein the  
2 gripping portion has a thickness of from about 0.5 to 20 mm.

1 48. The oral device of claim 46 wherein the  
2 gripping portion has a diameter of from about 2 to 7 cm.

1           49. A method of cleaning between the teeth of a  
2 human, comprising:  
3           inserting into the mouth an oral device that  
4 includes (a) a handle having a first end constructed to be  
5 grasped by a user and a second, free end; (b) a head,  
6 positioned at said second end of the handle, having a pair  
7 of elongated arms, said arms being substantially parallel to  
8 each other and having opposed surfaces; and (c) pairs of  
9 opposed cleaning elements, mounted on said opposed surfaces,  
10 said pairs of cleaning elements being positioned along said  
11 opposed surfaces at predetermined intervals, the distance  
12 between pairs corresponding substantially to the average  
13 spacing between human teeth;  
14           positioning the oral device so that the opposed  
15 cleaning elements straddle a row of teeth;  
16           pushing the oral device slowly toward the back of  
17 the mouth until each pair of opposed cleaning elements is  
18 positioned between two adjacent teeth; and  
19           pulling the oral device slowly toward the front of  
20 the mouth, causing the cleaning elements to wedge into the  
21 interproximal region between the adjacent teeth.



1           50. An oral device comprising:  
2           a handle;  
3           a head, extending from said handle, having a pair of  
4 elongated arms that include opposed surfaces; and  
5           pairs of opposed cleaning elements, mounted on said  
6 opposed surfaces, said pairs of cleaning elements being  
7 positioned along said opposed surfaces at predetermined  
8 intervals, the cleaning elements being constructed and  
9 positioned to be inserted into (the user's) interproximal  
10 regions when the oral device is moved back and forth with a  
11 ratcheting motion between a first direction and a second,  
12 opposite direction.